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(58) Field of search

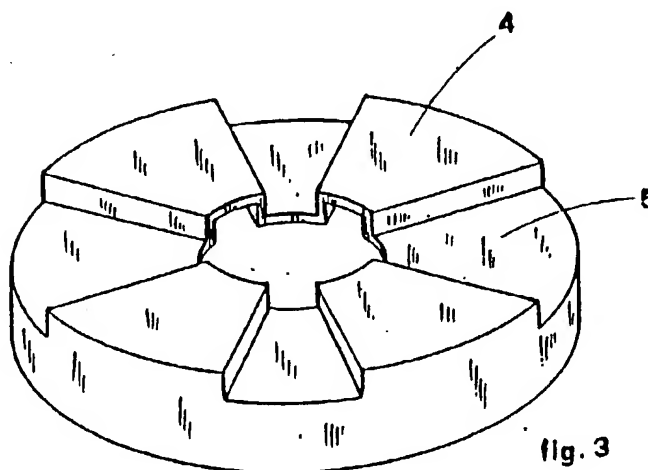
**UK CL (Edition K) A4A ACA, F4T TC, F4W**

**INT CL<sup>5</sup> A47J, F24C**

(54) **Plate to be placed over a gas burner**

(57) A plate for location over a gas burner comprises an upper surface (4) capable of receiving a container for food to be cooked, the upper surface defining a central aperture and a plurality of channels or grooves (5) which extend radially outwardly from said central aperture.

The plate may be integrally formed with or affixed to the base of a cooking container.



**GB 2 239 087 A**

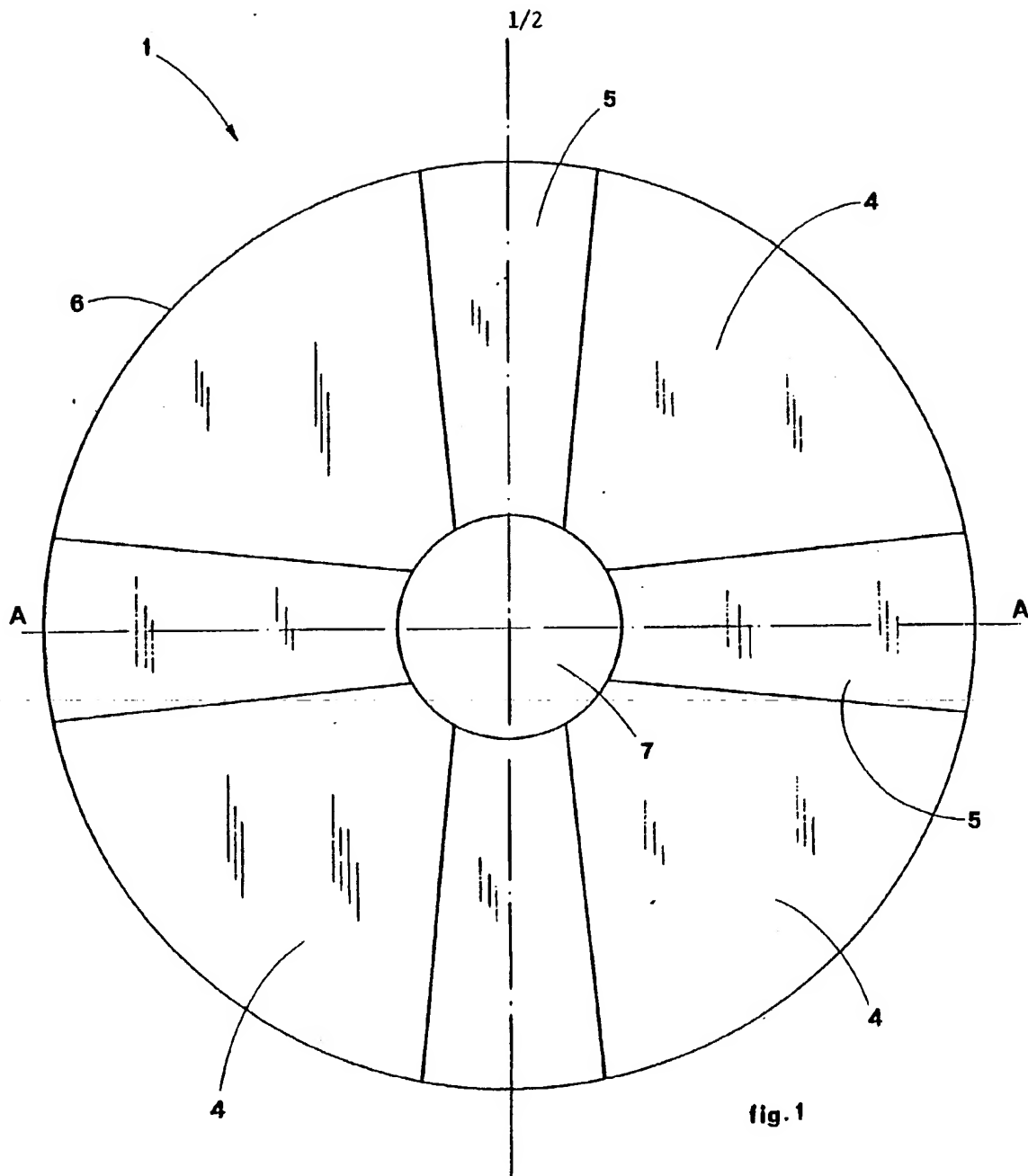
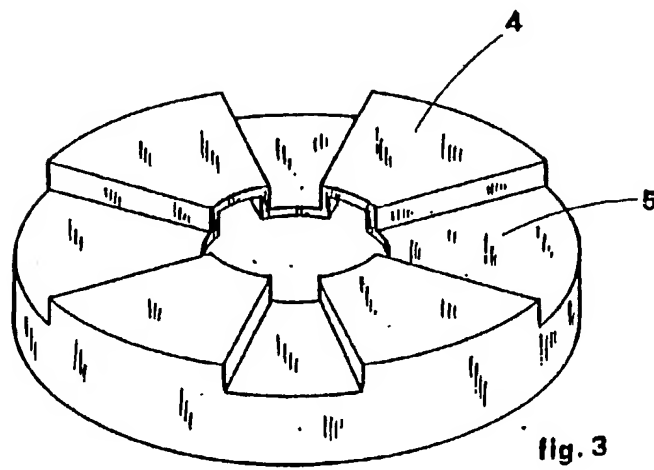
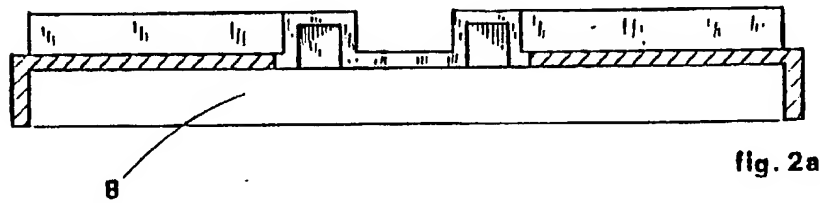
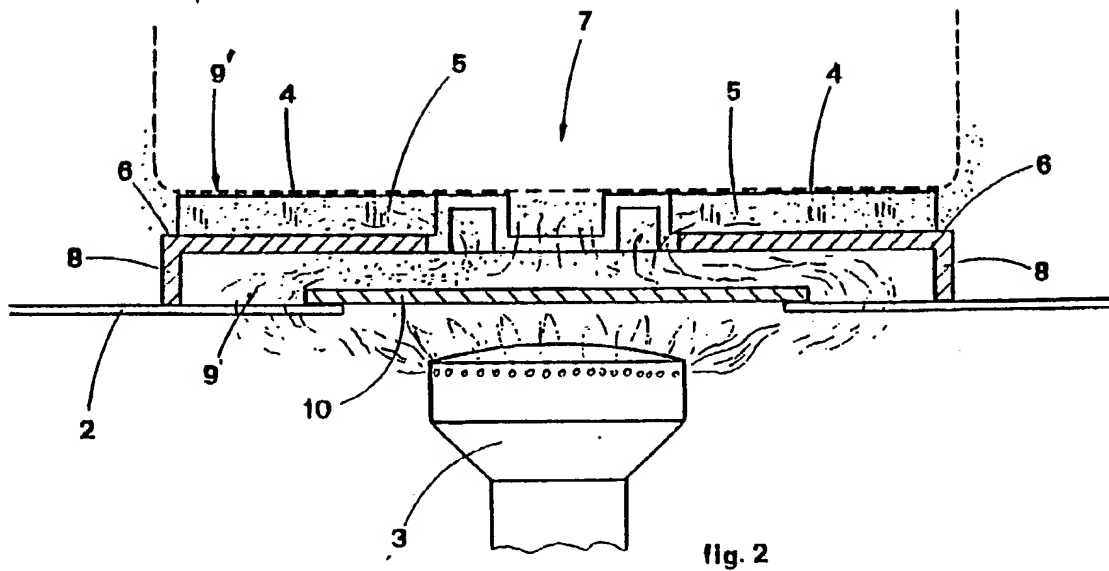


fig. 1



- 1 -

A HIGH-EFFICIENCY ENERGETIC PLATE TO BE  
PREFERABLY PLACED OVER A GAS BURNER OR THE LIKE

The present invention relates to a plate member. More particularly, the present invention relates to a plate member which is primarily intended to be located above a gas ring for cooking purposes.

The heating of cooking containers such as saucepans utilising the gas burners of conventional gas cookers is well known. Such heating is usually effected either by the direct action of the flame on the container, or by interposing a conventional irradiation plate between the burner and the container. In the first of these types of heating, the gas burner is usually situated beneath a grid member on which the containers to be heated are located. The flame generated by the gas burner directly impinges on the base of the container. This causes two major problems. firstly, the food in the container is burnt in the region where the flame impinges against the container and, secondly, the combustion gases are dispersed. Such gases are, of course, hot and the heat thereof is wasted. In addition, other inconveniences arise such as the burning of some of the food whilst other parts thereof remain substantially uncooked, the unpleasant taste of burnt food and, particularly, changes in the food itself, with consequential possible health risks.

Conventional irradiation plates have been produced in order to overcome these disadvantages. Such plates are located on the gas burner and the food is cooked without a direct contact from the flames. However, the heat losses which arise limit the use of such plates. In effect, the plate merely acts only as a barrier between the gas burner and the container. It

does not utilise the heat of the combustion gases which, as before, are dispersed into the atmosphere. The present invention seeks to provide a plate which does not suffer from the above-mentioned disadvantages. More particularly, the present invention seeks to provide a plate which more efficiently utilises and more uniformly distributes the heat generated by a gas burner.

To this end, a plate in accordance with the present invention seeks to utilise the heat contained in the combustion gases by directing them onto the cooking container.

The present invention also seeks to provide a plate which permits cooking to be effected so that improved dietetic-alimentary values are obtained. In addition, the present invention seeks to provide a plate having simple structural characteristics so that it can be produced very cheaply and in differing sizes and shapes.

According to the present invention, there is provided a plate for location over a gas burner comprising an upper surface capable of receiving a container for food to be cooked, the upper surface defining a central aperture and a plurality of channels or grooves which extend radially outwardly from said central aperture.

Preferably, the upper surface is provided with a peripheral flange which, in use, extends downwardly towards the gas burner, whereby the

combustion gases and heated air are directed towards and through the central aperture in the plate.

Desirably, each channel is open at its upper end and wherein the location of a container on the plate closes the upper end of each channel, thereby defining a flow path for the combustion gases and hot air which pass through the central aperture and along the radial grooves, the gases and air being dissipated into the ambient atmosphere through the radially outward open ends of the channels.

The invention will be further described, by way of example, with reference to the accompanying drawings, in which: -

Figure 1 shows a schematic plan view of a plate in accordance with the present invention;

Figure 2 shows a schematic vertical section view taken along the line A-A of Fig. 1, the plate being shown located above a conventional gas burner and having a container located thereon;

Figure 2a shows a view similar to Figure 2 but only shows the plate; and

Figure 3 shows a schematic perspective view of the plate shown in Figures 1, 2 and 2a.

In the drawings, there is shown a plate in accordance with the present invention and which is generally referenced 1. The plate is generally disc-shaped so that it can be located on a grid 2 of a conventional gas cooker, above a gas burner 3. The

plate 1 has an upper surface 4 on which a cooking container can be located as shown in Figure 2.

The plate has a peripheral edge 6 and a vertically extending, centrally disposed aperture 7. Radially extending channels or grooves 5 connect the central aperture 7 to the edge 6 of the plate 1.

The edge region 6 is bent downwards to form a peripheral flange 8 which rests on the grid 2. A container having a substantially circular flat base 9' is then placed on the upper surface 4 of the plate 1. An auxiliary diaphragm 10 is placed on the grid 2 so that it is surrounded by the flange 8 of the plate. From particularly Figure 2, it can be clearly seen that, if the burner is now ignited, a flow path for the combustion gases and heated air is formed. Initially, the gases pass into a chamber 9 which is the interior of the plate surrounded by the flange 8. From the chamber 9, the gases pass through the central aperture 7 into the channels 5. It will be appreciated that the base 9' of the container prevents, or at least minimises, the emission of the combustion gases directly into the ambient atmosphere from the aperture 7. Moreover, the base 9' of the container effectively closes the channels 5 and prevents the gases escaping until they reach the edge 6 of the plate 1. In such a way, the gases generated by the combustion impinge upon both the central portion and radially outer portions of the base of the container before they are dispersed in the ambient atmosphere. Accordingly, the high temperature of the gases is exploited more fully than has hitherto been possible so as to make the plate operate more efficiently.

The size of the plate and the material from which it is made can be modified in dependent upon the type of burner with which it is employed. The plate is so shaped as to utilise as much of the heat generated by the combustion as possible, such gases, at first, impinging on the centre of the container base and the passing along radial channels before being dissipated into the ambient atmosphere.

Food in the container is therefore not exposed to the direct action of the flame but it does absorb most of the heat produced by burning of the gas. Accordingly, when using a plate according to the present invention, alimentary-dietetic values are safeguarded. The arrangement described with reference to the drawings is a preferred embodiment of the invention. However, the plate may have more than one central aperture and more than four radially extending grooves.

The plate can, if desired, be fixed onto either the burner directly or onto the grid as well as being merely located on the grid as shown in the drawings. Moreover, the plate could, if desired be secured directly to the base of the cooking container being used. It is also possible for a container to be provided with a plate according to the present invention, so that the container and the plate form a unitary structure.



CLAIMS

1. A plate for location over a gas burner comprising an upper surface capable of receiving a container for food to be cooked, the upper surface defining a central aperture and a plurality of channels or grooves which extend radially outwardly from said central aperture.

2. A plate as claimed in claim 1, wherein the upper surface is provided with a peripheral flange which, in use, extends downwardly towards the gas burner, whereby the combustion gases and heated air are directed towards and through the central aperture in the plate.

3. A plate as claimed in claim 1 or 2, wherein each channel is open at its upper end and wherein the location of a container on the plate closes the upper end of each channel, thereby defining a flow path for the combustion gases and hot air which pass through the central aperture and along the radial grooves, the gases and air being dissipated into the ambient atmosphere through the radially outward open ends of the channels.

4. A plate as claimed in claim 1, substantially as hereinbefore described with reference to the accompanying drawings.

5. A combination of a cooking container and a plate as claimed in any one of claims 1 to 4 wherein the container has a base portion and the plate is integrally formed with the base of the container.

6. A combination of a cooking container and a plate as claimed in any one of claims 1 to 4 wherein the container has a base portion and the plate is affixed to said base portion.

7. A combination of a cooking container and a plate as claimed in claim 1 substantially as hereinbefore described.

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EUR-CL (EPC): F23D014/70 ; F24C015/10

## ABSTRACT:

CHG DATE=19940730 STATUS=O> A plate for location over a gas burner comprises an upper surface (4) capable of receiving a container for food to be cooked, the upper surface defining a central aperture and a plurality of channels or grooves (5) which extend radially outwardly from said central aperture. The plate may be integrally formed with or affixed to the base of a cooking container. <IMAGE> formed with or